PRELIMINARY

Health Assessment for

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PAGEL'S PIT

ROCKFORD, ILLINOIS

JANUARY 13, 1989

THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104(i)(7)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, states "...the term 'health assessment' shall include preliminary assessments of potential risks to human health posed by individual sites and facilities, based on such factors as the nature and extent of contamination, the existence of potential pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified hazardous substances and any available recommended exposure or tolerance limits for such hazardous substances, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The Administrator of ATSDR shall use appropriate data, risk assessments, risk evaluations and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, ATSDR has conducted this preliminary health assessment on the data in the site summary form. Additional health assessments may be conducted for this site as more information becomes available to ATSDR.

PRELIMINARY HEALTH ASSESSMENT
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Prepared by:
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Agency for Toxic Substances and Disease Registry (ATSDR)

Background

The Pagel's Pit Site (PPS) is listed by the U.S. Environmental Protection Agency on the National Priorities List (NPL). The 60-acre site is a former sand and gravel pit located in Rockford (Winnebago County), Illinois. Currently, PPS is used as a landfill. The shallow aquifer beneath the site was a source of potable water to area residents until contamination was discovered. Another NPL site located approximately 1,500 feet east of PPS is considered a contributor to area groundwater contamination. Access to the site is unrestricted. Area residents have been provided an alternate water supply (e.g., bottled water) while new wells are constructed. Also, a gas venting system has been installed in area residences. Removal operations have not occurred.

The following documents were reviewed by ATSDR: (1) Site Inspection Report, August 22, 1983, (2) Preliminary Assessment, February 21, 1983, (3) Extent of Sources of Groundwater Contamination-Acme Solvents, March 1983, (4) The Hazard Ranking Package, June 11, 1984, (5) Illinois EPA Remedial Investigation-Acme Solvents, July 1984, and (6) Supplemental Investigation Winnebago Reclamation, March 5, 1985. These documents form the basis of this Preliminary Health Assessment.

Environmental Contamination and Physical Hazards

Preliminary on-site groundwater sampling results have identified various volatile organic compounds (VOC's). They include: 1,1 dichloroethane (ND to 150 ppb), 1,1,1 trichloroethane (ND to 240 ppb), tetrachloroethene (ND to 470 ppb), trichloroethene (ND to 170 ppb), trans-1,2, dichloroethene (ND to 2,400 ppb), bis(2-ethylhexyl)phthalate (ND to 220 ppb). In addition, VOC's were detected in off-site private wells. Physical hazards were not reported.

Potential Environmental and Human Exposure Pathways

Potential environmental pathways include migration of contaminated groundwater, surface water, soils, and volatilization of contaminants in ambient air. In addition, bioaccumulation of contaminants in fish, water fowl, livestock, and commercial agricultural products may be another environmental pathway.

Potential human exposure to contaminants include ingestion and direct contact with groundwater, surface water, soil, and possible ingestion of bioaccumulated contaminants in the food chain. In addition, inhalation of volatilized contaminants or contaminants entrained in air are other potential sources for human exposure.

Demographics

PPS is located in a rural area. There are about 167 people living within a 1-mile radius of the site. The distance from PPS to the nearest residence is one-half mile.

Evaluation and Discussion

Seven private wells exist within the vicinity of the site and are used for potable purposes. Sampling results from these wells confirm the presence of site-related contaminants. An asphalt cover is present on-site. It has been reported that the asphalt cover may be fractured allowing contaminants to leach through the soil and enter the shallow aquifer. Bottled water has been supplied to the users of these wells and new wells have been put into operation. It is uncertain as to whether bottled water is continuing to be supplied or whether recent sampling has been performed on the new wells (to insure the absence of site-related contaminants). There are no municipal wells within the vicinity of PPS.

Area surface water (e.g., Killbuck Creek) is located on the eastern perimeter of the site. Killbuch Creek is used for recreational activities but not for potable purposes. Surface water and sediment sampling information has not been reported.

It is uncertain as to whether on-site soil and area off-site soil sampling has been performed. It has been reported that soil contamination has not been confirmed. However, there is a history of disposal of various organic solvents and heavy metals at this site. Since the site is accessible the public may likely come in contact with contaminated materials.

Air sampling measurements detected the release of VOC's. Moreover, methane has been migrating from the landfill. It has been reported that a gas venting system has been installed on-site. It is uncertain as to whether further sampling measurements at the stack or nearby area residences are necessary.

Food chain information was not reported. Since the area around the site is rural and commercial agriculture exists, food chain information (livestock, commercial crops, gardens, etc.) is necessary to rule out this potential exposure pathway. ATSDR has prepared, or will prepare, Toxicological Profiles on the site contaminants noted above.

Conclusions and Recommendations

Based on available information, this site is considered to be of potential public health concern because of the risk to human health caused by the possibility of human exposure to hazardous substances.

Direct contact and ingestion of groundwater by area residents is the most likely pathway. Other possible exposure routes include, direct contact and incidental ingestion of contaminated soils and surface water, and possible inhalation of volatilized contaminants or contaminants entrained in air.

Additional information on contaminants released, populations potentially exposed, and environmental pathways through which the contaminants can reach these populations is necessary. At a minimum, future investigations of this site should include a characterization of the site and site contaminants, resampling of area private wells, soil, sediment, surface water sampling, and a characterization of the hydrogeology of the area.

Further environmental characterization and sampling of the site and impacted off-site areas during the Remedial Investigation and Feasibility Study (RI/FS) should be designed to address the environmental and human exposure pathways discussed above. When additional information and data, such as the completed RI/FS, are available, such material will form the basis for further assessment by ATSDR, as warranted by site-specific public health issues.